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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,412	06/27/2001	Yoshio Katsuro	209073US	1351

22850 7590 11/05/2003

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ALEXANDRIA, VA 22314

EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/891,412

Applicant(s)

KATSURO ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-31 is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7,8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 7, "the resulting hydrogel" lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1-4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al. US 5,750,258.

Regarding claim 1, Sakai '258 discloses a method for making silica gel comprising hydrolysis of a silicon alkoxide to produce a sol-gel (see column 4, lines 40-52 and Example 1), and increasing the temperature of the resultant solution up to 60 degrees Celsius (see Example 1; column 16, lines 42-46).

Regarding claim 2, Sakai '258 discloses a breaking strength of 50 kgf/mm<sup>2</sup> (see column 8, lines 15-20).

Regarding claim 3, Sakai '258 discloses 60 degrees Celsius for 10 hours (see column 16, lines 42-46).

Regarding claim 4, Sakai '258 discloses addition of aqueous ammonia (see column 16, lines 36-38).

Regarding claim 6, Sakai '258 does not disclose a template.

7. Claims 1, 3-4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Misuda et al. US 5,307,821.

Regarding claim 1, Misuda '821 discloses a method of making silica gel comprising hydrolysis of a silicon alkoxide (see column 2, lines 37-45) and keeping at 60-70 degrees for 4-10 hours (see column 5, lines 35-39).

Regarding claim 3, Misuda '821 discloses 60-70 degrees for 4-10 hours (see column 5, lines 35-39).

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Regarding claim 4, Misuda '821 discloses addition of aqueous ammonia (see paragraph bridging columns 4-5).

Regarding claim 6, Misuda '821 does not disclose a template.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 7-10 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sakai '258.

Regarding claim 7, Sakai '258 discloses a silica gel made by a process comprising hydrolysis of a silicon alkoxide to produce a sol-gel (see column 4, lines 40-52 and Example 1), and increasing the temperature of the resultant solution up to 60 degrees Celsius (see Example 1; column 16, lines 42-46).

Regarding claim 8, Sakai '258 discloses a breaking strength of 50 kgf/mm<sup>2</sup> (see column 8, lines 15-20).

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Regarding claim 9, Sakai '258 discloses 60 degrees Celsius for 10 hours (see column 16, lines 42-46).

Regarding claim 10, Sakai '258 discloses addition of aqueous ammonia (see column 16, lines 36-38).

Regarding claim 20, Sakai '258 does not disclose a template.

10. Claims 7, 9-10, and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Misuda '821.

Regarding claim 7, Misuda '821 discloses a method of making silica gel comprising hydrolysis of a silicon alkoxide (see column 2, lines 37-45) and keeping at 60-70 degrees for 4-10 hours (see column 5, lines 35-39).

Regarding claim 9, Misuda '821 discloses 60-70 degrees for 4-10 hours (see column 5, lines 35-39).

Regarding claim 10, Misuda '821 discloses addition of aqueous ammonia (see paragraph bridging columns 4-5).

Regarding claim 20, Misuda '821 does not disclose a template.

11. In the event any differences can be shown for the product of the product-by-process claims 7-10 and 20, as opposed to the product taught by Sakai '258 and/or Misuda '821, such differences would have been obvious to one of ordinary skill in

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the art at the time the invention was made as a routine modification of the product in the absence of a showing of unexpected results; see also *In re Thorpe*, 227 USPQ 964 (Fed.Cir. 1985).

***Allowable Subject Matter***

12. Claims 22-31 are allowed.

13. Claims 5, 11-19, and 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: A silica gel having a mode diameter ( $D_{max}$ ) of pores less than 20 nm and wherein the volume of pores having diameters within  $\pm 20\%$  of  $D_{max}$  of at least 50% of the total pore volume would not have been obvious to one of ordinary skill in the art at the time the invention was made.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Haraguchi et al. US 5,834,551 discloses a composite silica gel produced by hydrolysis of silicon alkoxide (see abstract, Examples).

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M.

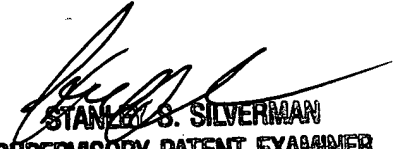
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Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 703-308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EMJ

  
STANLEY S. SILVERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700